Essex County Herald.

VOL. XXX — ISLAND POND, VT., FRIDAY, JANUARY 16, 1903. — NO. 36

Essex District Probate Court.

Sessions of said Court will be held at Brighton the second Tuesday of October and April, Canaan the second Tuesday of November and May. West Concord the second Tuesday of December and June. Lunenburg the second Tuesday of January and July. Special sessions will be held at any place in the District by agreement.

ROBERT CHASE, Judge.

THE GREAT NILE DAM

How Egypt Will Profit by This Stupendous Work

THE recent opening of the great Nile reservior and dam at Assouan, Egypt, marked the completion of one of the greatest engineering works of the world, and one which it is believed will prove of enormous value to that ancient land whose civilization dates back into the remote ages.

The great engineering works on the Nile include the main dam and navigation channel at Assouan, a barrage and lock at Assiout and a regulator and lock at the head of the Ibrahimieh canal at Assiout.

The dam is across the first rapids of the First cataract, to the north of the Island of Philæ, the granite hills overhanging the valley having afforded

AN OPEN SLUICE GATE.

the finest building material, while the rocky bed and islands of the cataract have been of inestimable advantage in facilitating the work.

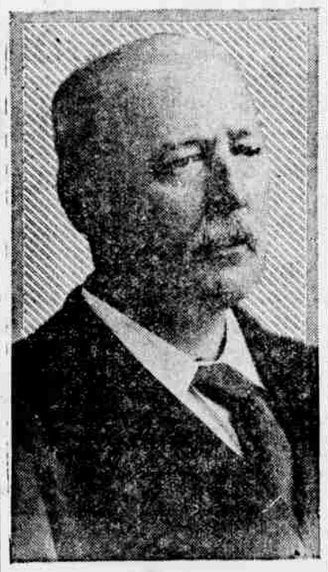
The dam is about a mile and a quarter along and about twenty-three feet wide on top. The rear or south surface is nearly vertical, but the north face or front slopes perceptibly. A difference of level in the water on the two sides will average about sixty-seven feet. Owing to the irregularities of the river bottom the depth to which the dam reaches varies greatly, but the maximum is 130 feet.

To these figures should be added the height of the foundation, a structure of granite masonry, laid up with hydraulic cement mortar and dipping to a considerable distance in spots. One great difficulty encountered was the rotten character of the rock here and there on the bottom. It therefore became necessary to excavate extensively to find a sound bed for the foundation. The front and rear faces of the dam are composed of granite masonry, with a filling of rubble, set in cement and placed by hand.

The great work at Assouan is to hold up water to about 345 feet above mean sea level. The greatest head on the dam will be about sixty-five feet, the lowest level on the down stream side being 280 feet. The storage capacity is estimated at 234,300,000,000 gallons of water, and the reservoir will flood the Nile valley to a distance of some fifty miles south of Assouan between December and May.

This reservoir will be filled between December and March after the flood has passed and will be discharged during May, June and July.

To provide for the escape of surplus water at times of flood the dam is pierced with 180 sluices, 140 undersluices and forty nearer the top of the dam. The



LORD CROMER
[Viceroy of Egypt.]

undersluices are twenty-three feet high and six and one-half feet wide. The upper ones have an area of seventy square feet.

In flood the sluices will be fully open, so as not to lessen appreciably the velocity of the river and to avoid the deposit of silt. After the flood, when the water is clear—for the Nile flood brings down the rich silt which is the fertilizer of Egypt—the sluices will be gradually closed and the reservoir filled. In an average year it should be filled by March 1. Only the upper sluices will then be opened to pass the discharge coming from the south, and the water in the reservoir will be maintained at that level.

In May, when the demand for water for the summer crops increases, the sluices will be gradually opened to supplement the supply in the river, and the water stored will gradually be discharged until July, when all the sluices will be fully open to pass the discharge of the Nile flood, which then begins.

The lining of the sluices is heavy granite blocks on cast iron plates. They are closed by steel gates, of which the greatest number work on free rollers suspended in frames.

In addition to these sluices, there are four locks, each measuring 260 by 32 feet, for the benefit of navigation. These are arranged so close to each other as to constitute a "ladder" and are situated in a canal at one end of the dam. Five gates serve for the four locks. Each gate has a depth of sixty feet, and instead of swinging on a hinge it moves on rollers above it, as do certain sliding doors in houses.

The special object of this great work is to secure a supply of water for irrigation purposes in the dry season and thus reclaim a vast amount of land that is now useless. It is estimated that the increased value of property in consequence of the benefit conferred on agriculturists will yield a return in taxes that will far more than pay the cost of the undertaking.

In order to make a fair distribution of the water from the Assouan reservoir a barrage was also built across the Nile at Assiout, north of the head of the Ibrahimieh canal. The supply of this canal will be augmented, and thus the area of land under perennial cultivation in middle Egypt and Fayum will enjoy improved irrigation during the summer, and about 400,000 acres of basin land will be converted to perennial irrigation.

The difficulties of constructing the foundation of the great Assouan dam were prodigious. The fall of the Nile at this point is sixteen feet, and the current rushes through the various channels at a speed of fifteen miles an hour.

Any one who was near Assouan, in Egypt, about four years ago might have seen a large number of railway

LOCK IN NAVIGATION CANAL.

cars loaded with stone which was carefully enwrapped with stout wire and dumped over into the river Nile. Each of these huge and heavy lumps weighed fifty tons or more.

These and other masses of rock which were deposited at that place and time were not on the site of the dam proper, but below it. Work on the main dam could be performed only in still water, and in order to check the current where the permanent structure was to be it was necessary to provide temporary barriers. Three of the latter, extending in a chain across the river, and each blocking a separate channel, were erected.

A large section of the river bed directly where the main dam was to stand was now inclosed with sand bags, piled high enough to rise above the surface of the stream. These were packed together with a degree of care designed to prevent serious leakage, for it was desirable at this stage of the operations to have a dry bottom to work on. The most critical period was that when the pumps were started, and the engineers were to discover whether this second set of temporary structures was water tight. Success attended their efforts, however. Only enough fluid trickled in to call for the services of two out of the twenty-four powerful pumps available.

The masons were thus enabled to proceed. Before they had finished work on one particular section of the river another was inclosed with sand bags in the same fashion. By degrees it was possible to extend the permanent structure all the way from one shore to the other.

The maximum number of workmen employed during these operations was 11,000, of whom about 1,000 were Europeans, mostly Italian stonemasons. Over 3,000 tons of masonry were sometimes completed in a day, and the work proceeded with great rapidity.

It was on Feb. 12, 1899, that the foundation stone was laid by the Duke of Connaught, and his wife laid the last stone of the same construction Dec. 10, 1902, the work having been completed a year ahead of the contract time.

This great work is built for all time and will probably live as far into the future as the history of Egypt looks into the past. By developing vast areas hitherto unfit for agriculture it will add greatly to Egypt's wealth.

ILL FATED HAPSBURGS.

How Misfortune Has Pursued the Family of the Emperor of Austria.

Princess Louise of Saxony, whose recent sensational escapade caused such a scandal in the courts of Europe, by birth belongs to the Hapsburg family, the reigning house of Austria-Hungary, which during the past fifty years has been overtaken by a long list of similar misfortunes.

Princess Louise is one of the most beautiful women of the European courts. She is the daughter of Grand Duke Frederick IV. of Tuscany, a kinsman of Emperor Francis Joseph and head of the nonreigning branch of the house of Hapsburg.

She was married in 1891 to Prince Frederick, son of King George of Saxony and heir to the throne of that kingdom. The royal couple have five children.

The troubles of the house of Hapsburg may be said to have opened by the shooting of the empress of Aus-

LOUISE OF SAXONY.

tria's brother, Maximilian, in Mexico, a tragedy which was followed a couple of weeks later by his widow becoming insane.

Only a few months later Archduke John of Austria, an uncle of the crown princess of Saxony, the heroine of the present episode, quarreled with the emperor to such a degree that he was dismissed from the army and deprived of his rank and honors as a prince of the blood.

In the following year Archduchess Maria, daughter of old Archduke Albert, commander in chief of the army, was burned to death in the palace of Schoenbrun through her dress catching fire from a lighted cigarette.

The still mysterious drama which robbed the emperor of his only son, Rudolph, at his shooting lodge of Meyerling about twelve years ago is still fresh in the minds of Austrians.

Four years later one of the sons of Archduke Joseph killed himself while out shooting in Hungary through an accidental discharge of his gun, and in 1898 the Empress Elizabeth was assassinated by the anarchist Luccani at Geneva, her sister, the Duchess of Alencon, a particular favorite of the emperor, having a short time previously met with her death in the flames of the charity bazaar at Paris.

Archduke Otto, who is next by but one in the line of succession to the throne, has already on two occasions been abandoned by his wife, a daughter of the present king of Saxony, in consequence of his brutality.

NEW YORK'S POLICE HEAD.

General F. V. Greene, Who Has a Good Record as a Soldier.

General Francis Vinton Greene, the new head of the police department in New York city, is a descendant of General Nathanael Greene of Revolutionary fame and traces his ancestry nearly back to the Mayflower.

Like his father before him, he is a West Pointer. He graduated at the head of his class in 1870 and was assigned to the artillery. Later he was military attache to the legation at St. Petersburg and followed the Russian

GENERAL FRANCIS V. GREENE.

army through the war with Turkey. Subsequently he wrote a history of that conflict.

He resigned from the army in 1887 to enter business. When the war with Spain broke out, he re-entered the service as a volunteer. He was sent to the Philippines as a brigadier general and commanded the second expedition to Manila. For his services he was made a major general, which rank he still retains. General Greene is fifty-two years old.

EDISON'S PROPHECIES.

1903 Will Be a Year of Wonderful Progress.

GREAT PROBLEMS TO BE SOLVED.

The Wizard Has Much Faith in Marconi and Wireless Telegraphy—Expects to See Electricity Supplant Steam as Motive Power In a Few Years—Medicine Played Out—Germ of Old Age May Be Discovered.

Thomas A. Edison, the great inventor, makes the following statement in the New York World:

"The great problems of the year are the problems of fighting bacteria, of getting electricity direct from coal, of getting power from the elements cheaply and in applying the many uses of electricity to manufactures.

"I look for a wonderful year. There is more activity in science than there has ever been before, more men are working on big problems and great discoveries would be only natural.

"For myself, my storage battery, on which I have worked four years, will be put on the market in January. It solves the traction problem, and its introduction means that the horse will have to go.

"I expect to give up practical invention for two years. I am going to experiment—going to delve in some problems that I have put by for an idle time and for once am going to work without having the production of a commercial commodity in view. I am going into the byways of science. I prefer not to say what my experiments will be. Yes, trying to get electricity direct from coal is one of them.

"The wireless telegraphy I assuredly expect to see perfected for commercial purposes, if not fully so in 1903 at least advanced toward that end. The right kind of man is working at it, a practical man, an earnest man, and I have confidence in him. As to the objection that messages may be tapped, that's as far as the objectors can see now. That may be true tonight; tomorrow it may be different.

"I'm not interested in the flying machine. I could never see any commercial use for it. I have never had time to read much about it.

"I expect to see electricity supplant steam as a motive power. In fifteen years electricity will be the railway motive power. Nineteen hundred and three will advance it in that direction.

"Nineteen hundred and three will bring great advances in surgery, in the study of bacteria, in the knowledge of the cause and prevention of disease. Medicine is played out. Every new discovery of bacteria shows us all the more convincingly that we have been wrong and that the million tons of stuff we have taken was all useless. They may even discover the germ of old age. I don't predict it, but it might be that by the sacrifice of animal life human life could be prolonged. The doctor of the future will give no medicine, but will instruct his patient in the care of the human frame, in diet and in the cause and prevention of diseases.

"Surgery, diet, antiseptics—these three are the vital things of the future in the preservation of the health of humanity. There were never so many able, active minds at work on the problems of disease as now, and all their discoveries are tending to the simple truth—that you can't improve on nature.

"The newspapers are among the great agents that will grow better in 1903 and in the years to come. They are the great school. A man who does not read the newspapers might as well be dead. They are a powerful influence for advancement. They are getting better, they are printing more science and paying more attention to the things that benefit and improve humanity.

"There will be few more wars. The world seems to be tending to peace. We should have a great navy, one three times as large as the present—not to fight, but to have ready in case there should be a fight. A great navy is one of the greatest stimulants to science.

"We are only in the infancy of electricity. Its possibilities no man can dream any more than a man fifty years ago could have foretold what we have today. Little discoveries like the Roentgen and the Becquerel rays and similar things will lead to great things—what, cannot be told just now.

"As to books, the books of today are more to my liking than the old books. It is so with painting. It is a great time. Great things are being done, and it is impossible to prophesy. Better health, greater enlightenment, better facilities of living, are being placed in our reach with every day. I look for a wonderful year of progress."

Hands Across the Sea.

The United States contributed in a fine manner to the Christmas joys of the old world, says a Washington dispatch to the New York Tribune. Chief Metcalf of the money order division of the postoffice department says that $6,000,000 has been sent to various European countries through the money order department. This money, too, went in small amounts, as the orders were mostly for sums ranging from $1 to $25. This, he believes, shows that the poor of America contributed of the prosperity of the home of their adoption to the poor of Europe. The $6,000,000 covers simply the Christmas holiday period. It breaks all previous records for generosity.

Novel Consumption Remedy.

Ballooning is the latest cure for consumption. The patient has to make ascents at stated intervals, increasing or decreasing the altitude in accordance with his condition.